



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/757,199 | 01/14/2004 | David Clifford Long | FIS920010163US2 | 3561 |

7590

09/16/2004

Ira D. Blecker

IBM Corporation / Intellectual Property Law

Bldg. 300-482 2070 Route 52

Hopewell Junction, NY 12533-6531

EXAMINER

NGUYEN, TAI V

ART UNIT

PAPER NUMBER

3729

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

YW

| | | | |
|------------------------------|-------------------------------|-----------------------------|--|
| Office Action Summary | Application No. 10/757,199 | Applicant(s) LONG ET AL. | |
| | Examiner Tai Van Nguyen | Art Unit 3729 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-19 and 21- 23 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. Following title is suggested: A METHOD OF FORMING A DIELECTRIC SUBSTRATE HAVING A MULTITURN INDUCTOR.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 14-19 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Ikuta Takanori (JP 07-326517) herein after '517.

The '517 teaches a method of forming a dielectric substrate having a multiturn inductor, the method comprising the steps of: a) obtaining a plurality of layers (1a-1g, Fig. 8); b) forming conductive lines (2b) on a first group of layers (1b); c) forming conductive vias (9) in a second group of layers (1c); d) forming conductive lines on a third group of layers; e) stacking at least one layer from the second group of layers on at least one layer from the third group of layers, and f) stacking at least one layer (1a) from the first group of layers (1b) on the at least one layer from the second group of layers (1c) wherein the stacking of the first, second and third groups of layers cause the

Art Unit: 3729

vias (9) in the second group of layers to contact the conductive lines (54b) in the first and third groups of layers (54d) to form an inductor buried within a dielectric substrate (see Fig. 8).

As applied to claim 15, The '517 teaches the respective layers are green sheets and the inductor and dielectric substrate are unsintered and further comprising the step of: g) sintering the unsintered dielectric substrate having an unsintered inductor buried therein to form a dielectric substrate having a multiturn inductor buried therein (see specification (machine translation) page 5, column 0041).

As applied to claim 16, The '517 teaches a plurality of layers from each of the first (1b, Fig. 8) and third groups of layers (1d).

As applied to claim 17, The '517 teaches a plurality of layers from the second group of layers (1c, Fig. 8).

As applied to claim 18, The '517 teaches the vias in the second group of layers (1c) contact the conductive lines (54b) in the first and third groups of layers only at the ends of the conductive lines (see Fig. 8).

As applied to claim 19, The '517 teaches vias in the second group of layers (3b) contact the conductive lines (54b) in the first and third groups of layers (54d) along the length of the conductive lines.

As applied to claim 23, The '517 teaches the conductive lines in the first and third groups of layers each comprise at least two parallel wiring lines of unequal length in juxtaposition (see Fig. 8).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikuta Takanori.

Regarding claims 21-22, it would have been an mere matter of design choice to choose that the conductive lines in the first and third groups of layers are planar in shape so as to comprise a flat portion having a width and a thickness less than the width, the conductive vias having a circular contact surface and the flat portion of the conductive lines in the first and third groups of layers in contact with the circular contact surface of the conductive vias, and the planar wiring lines directly contact the circular contact surface of the conductive vias since these limitations do not, solve any stated problem or are for any particular purpose. It appears that the invention would perform well with the conductive lines in the first and third groups of layers are planar in shape so as to comprise a flat portion having a width and a thickness less than the width, the conductive vias having a circular contact surface and the flat portion of the conductive lines in the first and third groups of layers in contact with the circular contact surface of the conductive vias, the planar wiring lines directly contact the circular contact surface of the conductive vias, of Ikuta Takanori.

Claim Objections

6. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tai Van Nguyen whose telephone number is 703-308-1791. The examiner can normally be reached on M-F (7:30-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


CARL J. ARBES
PRIMARY EXAMINER
9/13/04 TN